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ABSTRACT

This paper suggests that throughout human history technological revolutions have often created the potential for social revolutions as these new ways of doing things were applied to society. Often, it has been these changes in technology, more than ideology, that have created changes in the way human society is organized. The document contends people today are experiencing a telecommunications revolution that will have a major influence on the way they live. The paper divides the political interests into two camps: (1) the Internet camp with a decentralized approach to telecommunications development; and (2) the telephone and cable companies that seek to establish bottlenecks in the communications process to maintain near monopoly control. The sections in this paper include: (1) "The Technology"; (2) "Political Significance"; (3) "Economic Development"; (4) "Historic Relationship of Business and Government"; (5) "Television's Social and Political Effects"; (5) "The Current Situation"; and (6) "Conclusion." (EH)

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THE END OF MASS SOCIETY?:
A Preface to Telecommunications Politics

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THE END OF MASS SOCIETY?:
A Preface to Telecommunications Politics[1]

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Throughout human history, technological revolutions have often created the potential for social revolutions as these new ways of doing things were applied to society. Often, it has been these changes in technology, more than ideology, that have created changes in the way human society is organized. For example, about ten thousand years ago, humankind experienced the agricultural revolution. Through the development of agricultural technology, human beings were able to plant crops and to raise livestock. This eliminated the necessity for human beings to follow the migration of animals, and the changes in weather patterns which led to movements to new locations where plants were in more abundance. As populations gave up the needs of hunting and food gathering, they began to settle in fixed locations. In other words, the agricultural revolution (a technological revolution) led to the urban revolution (a social revolution). Interestingly, the wars that have been fought in the centuries since these revolutions have often been ones of nomads versus city dwellers.

Today, we are experiencing a telecommunications revolution, which along with microcomputer technology, makes possible forms of social organization different from those of the industrial age. However, the centers of power which developed from the application of industrial technology are not likely to give up control easily. It remains to be seen whether the decentralizing potential of microcomputer and broad band telecommunications technology will be applied to create new institutional relationships and empower the individual in ways which have not been possible under industrial technology. To understand this better, it is important that we examine the new technology and explore the development of individualism which has been the hallmark of modern thinking since the Enlightenment.

The Technology

When digital computers were first introduced commercially after World War II they were not very powerful, even though they took up whole floors of office buildings and were very costly. Moreover, in order to use them, people had to learn to express themselves digitally, and to specify such things as the end points of a line on a graph by their numerical coordinates. This did not lead to the easy use of computers, and their employment was confined to large scale businesses and to government. In the early 1980s, the personal desktop computer was introduced, but these too had limited capabilities, were command driven, and were difficult to program.

With the advent of more powerful processors and the use of more memory and higher resolution screens, we began to be able to communicate with computers in a more analogue fashion--more like the way people think. Although such an analogue interface had been developed on a large

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mainframe computer in Xerox's research facilities much earlier, it was first introduced commercially by Apple in the form of the Macintosh Operating System in 1984. With this interface, in order to draw a line, for example, one simply used a pointing device--such as a computer mouse--and indicated graphically on the computer screen where the line should begin, and where it should end. This was far easier than having to specify the numerical coordinates of the end points.

Through the use of these more powerful computers, we have been able to develop graphic user interfaces (GUIs), and computer applications have become much more accessible to the average person, both intellectually and economically. In addition to the Macintosh, the use of analogue interfaces was seen on the PC in the migration of IBM compatibles from DOS to Windows. By allowing people to express themselves more naturally, these interfaces have transformed the computer into an instrument which can perform a lot of the drudgery work such as numerical calculations and locating specific reference materials, while human beings have been freed to do what they do best--to link and compare ideas and pieces of information. In other words, the advent of more powerful desktop computers has expanded for people what an Apple ad once referred to as the *freedom to associate*.

What we thus have on the desktop today are very powerful machines which can help people manipulate information--whether that information be numerical, textual, or graphic, or even involves sound or video. What is more, these machines can now be linked so that users can share information. At the present time, the information which can be shared over large distances is basically text and data. However, with the advent of optical fiber and broad band networks, these machines will also be able to share--either across the hall or around the world--high resolution graphics, audio, and video, as well as interactive programs.

With this technology, we are able to achieve collaborative computing, in which two or more people--no matter where they are located--are able to work together by computer on the same project and share ideas, and also obtain information from anywhere in the world. However, it is more than information that is being shared. It is ideas and knowledge. With linked powerful computers, an idea originated by one person can easily be augmented and expanded upon by another. With one person rapidly building on the ideas of many others, human understanding can increase exponentially within a very short time frame. What we are thus about to establish is potentially a *global neural network* through which ideas may be shared, developed and built upon.

This is of great significance intellectually, personally, and from a business perspective. It can lead to an immense increase in creativity and, by giving the average person easy access to information and ideas, it can significantly lower barriers for market entry by small and less well funded entrepreneurs. Of course, this global neural net--whose foci are computer-assisted human beings--can be used not only for conducting business, but for all aspects of human life, including the medical, the educational, and the recreational. What is therefore emerging is not simply an information *economy*, but an information *society*--in which the basic mode of operation is not the top-down approach of one-to-many, but rather the bottom-up one of many-to-many or peer-to-peer. In short, we have the potential of moving from a *mass society* to a *networked society*--both in the computer and human sense of the word.

This transformation increases the possibilities of freedom in ways which both the left (who would emphasize human expression) and the right (who would focus on easy business entry and the operation of the free market) would appreciate. From the business point of view, a world-wide market would place emphasis on volume rather than on margin. In this highly connected world, a

small business that even captures only 1/100th of a percent of the market would be doing well--especially when that market is potentially made up of billions of people.

Political Significance

Thus, what the telecommunications revolution represents is the development of a technology which is *decentralizing* in nature, rather than the *centralizing* technologies of the industrial age which we have been working with for the last several centuries. However, this potential decentralization in human organization can be *coordinated* on the machine level, without necessarily giving advantage to one group or another. In short, what the telecommunications and information revolutions allow is what might be called *organized anarchy*--or, perhaps more appropriately, coordinated anarchy. To better understand the political meaning of this, we need to view this technological transformation and the social organization which it is capable of supporting from an historic and philosophic perspective.

The distinguishing characteristics of the modern age is a focus on the individual. In previous epochs, people were usually conceived of simply as a part of a larger society. For example, in his *Republic*, Plato defined justice as everyone performing well the role that they had been assigned by society. Throughout most of history, the ruler was seen as governing either as a God, or by divine guidance or divine right. From this perspective, it was understood that the individual subject was morally obligated to obey the ruler.

In modern thinking, our understanding of society begins with the individual rather than with the group or society as a whole. This is what was so important in our Declaration of Independence whose philosophy begins: "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain inalienable rights." And the Declaration goes on to state that: "To secure these rights [of the individual], governments are instituted among men, deriving their just powers from the consent of the governed." In this philosophy, the individual comes first, government and society come later.

This modern way of thinking and the concept of individualism might be said to have originated with Thomas Hobbs. Hobbs suggested that our studies should begin with the individual. However, he saw a problem in this. Hobbs felt that in such a framework, one would be faced with a state of anarchy, or as he called it "a war of all against all." To solve this problem, Thomas Hobbs suggested that a supreme ruler be appointed--whom he called the Leviathan--a ruler to whom he believed all power must be given. This would assure order in society; however, in order to achieve this, individuals would have to give up their freedom.

Our Constitutional forebears sought to deal with this problem in a different way--and avoid *both* anarchy and tyranny. The major purpose of our Constitution was to create a stronger and more stable government than had existed under the Articles of Confederation. The Founders saw their major function in establishing such a government as preventing on the one hand the dangers of anarchy (or, as they referred to it, the excess of majority rule), and on the other hand also preventing the excesses of tyranny. Preventing tyranny was achieved by our Founders through a system of countervailing powers or, as we commonly know it, a system of *checks and balances*. This was an idea whose roots may be found in Aristotle's concept of mixed government. To prevent anarchy, the Founders introduced a number of filters to the unbridled expressions of popular will--such as the electoral college, the fact that originally only the House was directly elected by the people, and the fact that under the Constitution the people themselves could not directly recommend the amendment of the Constitution.

It was a liberal constitution, such as ours, and the formation of a modern large scale republic that became the primary way of organizing government in the modern world. Individualism in the political arena thus came to be expressed as what many today would call *liberalism*.

Economic Development

On the economic level, the individualism of the modern era came to be expressed in another way: as *capitalism*. Throughout most of history, from ancient to more recent times, the economy was directed by government. During the middle ages, for example, our feudal economy was intertwined with both governmental and religious institutions. When the Age of Reason began, much early technological and economic development was sponsored by the king or queen in the form of mercantilism. Adam Smith, however, believed that the concept of individualism should also be applied to the economy. His theory, which he expressed in *The Wealth of Nations*, was that if we had many small businesses vigorously competing with each other, the government need not be involved in directing the economy for the public good. He felt that this vigorous competition would induce free market forces which would *automatically* cause the economy to function in the public interest. Those businesses which produced the best goods at the lowest prices would be the ones the consumer would choose, while those businesses whose goods were either inferior or too expensive would fail. Thus Adam Smith believed that the *invisible hand* of the free market could replace the *visible hand* of government in directing the economy to serve the public. As long as businesses remained *small* and there were *many* to choose from, such would be the case, and there would be no need to worry about concentrations of power.

Thus, what Adam Smith presented in this theory of classical capitalism was both economic and *political* in content. He did not urge simply that the free market should be allowed to operate unhindered, but felt that by doing so this would lead to the automatic achievement of the public interest. In other words, he saw the free market as a means to an end: the achievement of the public good. And so, the individualism of the modern era expressed economically came to be called capitalism.

Our constitutional Founders sought to ensure against tyranny, so that the public could express itself, by developing a theory of countervailing powers on the institutional or macro level. Adam Smith's theory, on the other hand, sought to achieve this--i.e., the public good--by encouraging competition and allowing for the operation of countervailing forces on the micro level.

Historic Relationship of Business and Government

The concept of individualism has been widely accepted by modern thinkers and has become the hallmark of many of our ways of thinking about the world. Unfortunately, reality has not always matched our theories. Even as Adam Smith was writing the *Wealth of Nations*, the technology that was developing then required larger amounts of capital for its deployment than could likely be amassed by individual business people or even a few of them. At first, this problem was dealt with by the formation of joint stock companies in which many individuals would pool their resources in order to support a larger business undertaking. Because of the failure of one of these large businesses in England, the South Seas Company, in which many among the nobility lost a great deal of money, the South Seas Bubble Act was passed. This Act sought to limit the formation of such large undertakings. However, because it was poorly drafted, the Act actually served as the basis for the formation of such enterprises. Moreover a newer legal construction, the business corporation with its concept of limited liability, enhanced even further the ability to develop large business institutions.

In the United States, corporations were first used to support the development of publicly needed enterprises, such as canals, roadways, and railways. Later they were used for other purposes as we moved from the practice of special incorporation--requiring action by the legislature--to general incorporation--requiring only bureaucratic action.

Politically, the Constitution in the United States had brought forth a stronger government under Federalist leadership, and later under the Federalist-inspired faction of the Democratic-Republican party. To some extent, government leaders sought to direct the development of our economy. Such moves were vigorously opposed by a faction of the Democratic-Republican party under the leadership of such people as Martin Van Buren. Andrew Jackson, under the sponsorship of Van Buren, was elected to the Presidency in 1828, bringing this faction to power establishing the reign of the Democratic party, until 1860. The Age of Jackson focused the nation's attention on the west, and the frontier began to play a major role in American thinking and development. As people moved west of the Appalachians, they were largely out of the control of the power centers of the Eastern seaboard. Socially, this led to a leveling effect, and to a strengthening of local government. It was these conditions that fostered the spirit that Alexis deTocqueville described in his *Democracy in America*. By the 1840s, small local business people had begun to specialize and use the newer technologies that were springing up at the time. As these small businessmen--or New Men, as Robert Dahl called them in *Who Governs*--began to gather strength, they supported the emergence of the Republican party. In this largely individualistic and small business environment, capitalism began to flourish on the American landscape. However, even as early as the Civil War, things began to change. In attempting to fight the war, Lincoln had problems in mobilizing both troops and military supplies. There was no easy way to achieve coordination on a national level even in pursuing the war effort. As a result of this and other forces, the National Railroad Act was passed in 1862--in the midst of the Civil War--envisioning railroads crossing the entire continent, and linking the Atlantic and Pacific oceans.

With the deployment of the railroads and the telegraph by the 1870s and 1880s, the transportation and communication technologies were in place which would allow us to pursue the industrial revolution in earnest. The railroad allowed for the transport of goods over a very wide area, and thus for the mass distribution of consumer goods. With the possibility of mass consumption, mass production became economically feasible and an industrial economy began to take form. However, in order for mass production to be achieved, it was necessary for institutions to evolve which could coordinate and manage these complex activities, as John Kenneth Galbraith points out in *The New Industrial State*. This led to the development of the large scale nationwide business corporation.

As big business emerged in the late 1800s, major changes began to take place in our institutions of government. Before this time, business had been conducted largely on the local level. As such, local and state governments could easily handle matters relating to business. Now, however, business was beginning to be conducted on a continent-wide basis. Before the emergence of big business, most enterprises would handle their affairs in the state courts. However, in the late 1800s businesses began to use the federal courts to resolve many of their disputes.

Moreover, it was previously possible for state governments to protect the public from unscrupulous business practices and to ensure that business in the public interest. As industry began to function on a nationwide basis, the states could no longer do this. For example, the states could not regulate the transportation costs of products shipped on the railroads across state lines. Farmers, at the time, were being charged exorbitant amounts to bring their produce to market. The federal

Constitution had always empowered our national government to regulate *interstate* commerce. This power had not previously been used to any great extent, however, because most businesses had been carried out within state boundaries. But as businesses came to be conducted on an interstate basis, the role of the federal government in regulating businesses emerged with the establishment of various federal regulatory agencies.

This process began with the Interstate Commerce Commission in 1887. To cope with other aspects of the industrial revolution and the concomitant emergence of big business, other federal regulatory agencies continued to develop, even under the Republican Party, which by 1896 had largely come to represent big business. By the 1920s--well before Franklin Roosevelt and the New Deal--the federal government had become so large that it was necessary to restructure the operation of the Executive Branch. In fact, since the federal agencies which were being established functioned within the Executive Branch and this branch therefore had grown so large, books of the era that discussed American government began to place their chapters on the Executive Branch before those on Congress--recognizing that the Executive Branch was becoming the dominant branch in American government. The need for administration in both business and government had become widely recognized intellectually by the 1920s, and the thinking of the time was dominated by what was then called the *science of administration*--what today has emerged as the studies of both business and public administration.

Thus, it was the industrial revolution and the needs of administering it that led to the development of both big business in the form of the large scale business corporation, and to big government. As Galbraith points out, during the 1800s there was a struggle between big business and big government. As one side won, the other lost. However, during the twentieth century, the institutions of big business and big government began to become interrelated. This was especially true as a result of World War II and the Cold War. It was more this intertwining of interests that led to what President Eisenhower identified in 1960 as the emergence of a military-industrial complex.

In discussing this, many have placed the emphasis on the military aspects of this phenomenon. The more important aspect of this development, however, has been the emergence of an institutionalized relationship between business and government, often called the Iron Triangle. Thus, the need for the management of industrial technology, and the need for long term planning because of the immense amounts of money involved in modern enterprises, has led to the development of both large scale business and large scale governmental institutions. However, the existence of these institutions is greatly at variance with the principles of individualism laid down by both our Founders, and by Adam Smith.

Post World War II technological developments have only increased the scale of the disparity between the theories of individualism and the realities of the modern world. Such technologies as the jet plane, satellite communications, and the handling of information by large scale digital computers allowed business enterprises to become global in scope, and to operate in arenas far beyond the jurisdictions of any one nation-state. And during this period, we have witnessed the increasing power of global corporate institutions--especially as compared to that of governments.

Television's Social and Political Effects

Developments in communications technology during the twentieth century affected more than just business and government. They changed the very nature of social relationships. This was true to some extent with the radio, but was evidenced most markedly with television.

The first nationwide television hookup took place in 1950 with one of President Truman's news conferences. The technology of microwave communications allowed the development of national news programs, which took center stage away from local news broadcasts. As this occurred, people began to pay more attention to television than to what was happening in their own neighborhoods. The television screen soon became most people's window on the world. If an event did not appear on the Six O'clock News, it did not happen. The diversity of information sources available to most Americans decreased, and many of the community organizations which had traditionally served as a buffer for communication and action between the individual and society as a whole began to dissolve.

In its beginning, television news divisions were separate from the entertainment divisions of the major networks, and many news departments were made up of former radio journalists. This situation changed markedly, however, when television news became folded into the general divisions of the major networks. This meant that television news had to compete for ratings, and place more of an emphasis on popularity than on journalistic accuracy.

In addition, there was bias in television news introduced not by political idealogy, but by the very medium itself. Television news coverage requires video footage. Thus, often what determines the priority of television news stories is not the importance of the event, but the availability of footage about the story. Since significant political events very often occur with little or no video footage and are often not of immediate interest to the general population, these events often get much less--if any--coverage. Moreover, analysis often involves talking heads which are not seen as very interesting. Thus, television news is often devoid of analysis. The influence of television on people's understanding of the world, and therefore on politics, has become very substantial today. Many books in political science have appeared about the media in recent years, and the media has become an important field in political science research and teaching.

Obviously, as people focused on television rather than on neighborhood events, politicians began to use this medium for campaigning. Some of the first efforts as seen in the 1952 presidential election were quite rudimentary, and perhaps even a bit naive. However, as time went on, political commercials have become far more sophisticated--and far more *expensive*.

Machine politics, which had dominated the cities in the early part of this century were dying out by the 1950s. Some of this was due to a number of the reforms that had been inspired by the Progressive and other movements. Much had to do with the fact that the immigrant groups--which had been serviced by the political bosses--had been assimilated into American society, and were becoming more middle class in the prosperity and in the increasing opportunities then experienced after World War II.

The effects of these changes became magnified by television. When people's attention had been fixed on their local communities, neighborhood opinion-makers were important in the political process, and were sought out by political organizations. Reaching these people, whom Robert Dahl and others called *subleaders*, often served to gain the support of entire neighborhoods. In this mode of organization, having enough people to do door-to-door campaigning--even for national office--was very important. Campaigning at the time was thus very *labor* intensive.

With the development of television, it became more important to get one's message across on the air. In order to do this, one needed heavy financing. Money was needed not only to buy television time, but also to buy media experts (who could shape your message) and pollsters (who could tell how well your message was getting across). In other words, campaigning for Congressional, statewide, and national office became far more *capital* intensive.

The Republican Party was the first to make use of these new technologies, and adopt the requirements they placed on campaigns. However, the Democratic Party soon began to follow suit. As candidates began to recognize the needs of campaigning in the Television Age, and the need to fund these activities, they began to develop their own financial resources. As a result political parties became less relevant, at first. However, the major political parties began to recognize the need for change, and transformed themselves largely into fund raising organizations. In so doing the parties did survive, but they changed markedly in terms of how they functioned. The national parties, as fund raising mechanisms, became more important; and many local organizations began to wane.

In recent decades, we have seen dramatic increases in the amounts of money that have to be raised for political campaigns. As a result of changes in the campaign finance laws, court cases, and decisions of the Federal Election Commission, PACs, soft money, and other mechanisms were established which allowed for this fund raising.

As a result of all this, political candidates and the political parties became more beholden to money, and to corporations. This is true of both the Republican and Democratic parties. In fact, one might say that the first requirement of running for public office today is the ability to raise money. Without the intermediary layer of neighborhood and other human networking institutions, the individual has become increasingly adrift in modern society, and increasingly subject to manipulation by those who control the media. As a result, politicians have become increasingly dependent on fund raising in order to gain access to the media--a phenomenon detrimental both to the individual, and to the democratic process.

In recent years, the emphasis in politics on national fund raising and the decreased reliance on local activities and organizations has led to a dramatic contrast between what goes on within the Washington Beltway and what is happening outside of it. However, the paradox in the current situation is that no matter how hard politicians campaign against Washington as candidates, as officeholders they must operate within the Washington milieu. If they do not, and try to remain true to their anti-Washington campaign positions, they will be ineffective as officeholders. In order not to appear hypocritical, however, they need to dress up their pro-Washington, and--because of fund raising needs--pro-big business, *actions* with *rhetoric* that seems to reflect what is going on outside the Beltway.

Since politicians do not wish to appear to be operating in the interest of large corporations and other moneyed groups, they loudly adopt slogans and sound bites to the contrary. The details of the legislation they pass and the policies they follow, however, often belie their statements. This is not so much an indication of individual weakness of character, but a requirement of our current system of politics. In other words: the problem today lies not with individual politicians; it lies in the system itself.

As far as average voters are concerned, they often cannot understand why, if the rhetoric being adopted by the candidates for whom they vote talks in terms of the empowerment of the individual and the local community, individuals and communities continue to feel less and less powerful--and increasingly politically ineffective. This bewilderment is often expressed in anti-Washington and anti-government sentiments. However, the problem of the decreased power of the individual is not a matter of *governmental* developments alone, it is to a large extent the result of policies being pursued by large scale *business* corporations.

On the matter of unemployment, for example, the government can at best provide training. It is up to business to provide jobs. And it is the large scale national and global corporations which have caused a decrease in the availability of local jobs through their policies of disinvestment and job

exportation. A local factory, upon which a whole town might depend for its economic health, is today no longer likely to be controlled by local business people. It is more likely to be owned by a conglomerate, headquartered in a distant city, with no ties at all to the local community. Local governments are therefore often more dependent on economic decisions made well beyond their borders by business institutions, than by the mandates--funded or unfunded--of national or state governmental institutions.

For example, since local and state governments by law are required to have a balanced budget, they must often borrow money for capital projects. In so doing, they are dependent on rating organizations to determine how much interest they must pay on the bonds they issue. These rating organizations understandably pay more attention to economic factors than to the social needs of the local community. As a result, local governments often feel forced to adopt these business priorities over those of their own constituents.

A more important factor is that larger businesses often threaten to move out of a locality if their interests are not met. Because of the ability of these national and global corporations to pit locality against locality, state against state, and even nation against nation, local and state governments are often forced to act more in the interest of these large scale business institutions than in the interests of their citizens. However, because the actions of business institutions are often less public, less direct, and more complicated than government actions, people tend to place the blame on government rather than on the actions of large scale businesses.

Government, in theory, is supposed to protect the individual. However, because of the need for campaign financing and other pressures, politicians today often acquiesce to the wishes of large scale business enterprises. At one time, this may have made sense. At that time, larger business enterprises would add to the economic health of local communities. As Jane Jacobs indicates in *The Economy of Cities*, a large scale business could help the local community by providing local jobs, by making local capital investments, by increasing the revenue stream of local and state governments, and by encouraging the development of local spinoff small businesses which would serve the needs of the large scale business. Today, however, many of the connections between large scale national and global businesses and the local community have been severed--although these connections still remain very much intact as far as local small businesses are concerned. Large national and global companies tend to employ people overseas, tend not to invest in local communities, tend to purchase goods and services from distant subsidiaries, and tend to pressure local and state governments for reductions in the taxes they pay.

Moreover, in an industrial economy, the wealthy needed the poor to work in their factories and help create wealth. It was therefore to the advantage of large scale businesses to support government services that would assist their laborers. With the adoption of recent technologies, however, these large scale businesses often find that they are not as dependent on local workers for the creation of wealth. They are thus attempting to achieve savings by decreasing their work forces and by not supporting government programs that would serve the average worker.

There has been much economic malaise felt by both the middle class and the poor as a result of these changes. Unfortunately, the press and the people have tended to focus more on government action than on the actions of major businesses.

As conceived of in the Declaration of Independence, governments are supposed to protect the interests of the individual. "That to secure these rights [of the individual] governments are instituted among men, deriving their just powers from the consent of the governed." As we have seen, the fact that they increasingly fail to do so today is a result of the centralizing tendency of

industrial technology, and the propensity of this technology and the social organizations that have evolved to harness it to create concentrations of economic, and--especially in the age of television--political, power. Given the current situation, it is necessary that government be reformed and made to serve the interests of the people, not that it be further weakened.

The dangers of the current tendency to unanalytically blame Washington alone for our tenuous personal economic conditions need to be understood. What is being popularly suggested is that we *decentralize* governmental institutions, while at the same time neglecting to note the increased *centralization* of large scale business enterprises in national and global organizations. This may well serve to get Washington off the backs of the people, but who will get AT&T, the local telephone and cable companies, the banks, and other large scale business institutions off their backs.

The Current Situation

It is within the context of these technological, political, and social developments that one needs to view the telecommunications policies of the administration and the telecommunications bills currently before Congress (S652 and HR1555). In general, one can divide the interests involved into two camps.

The Internet Camp. On the one hand, there are those who have been raised on the Internet, and who favor a decentralized approach to telecommunications development. They are accustomed to the situation which we have called *organized anarchy*, in which one can communicate freely at inexpensive rates, share ideas and information through bulletin boards and list servers within the electronic communities in which one participates, and communicate individually with anyone anywhere in the world, sharing ideas and exchanging personal information. The World Wide Web, and especially such net browses as NetScape, provide an easy means for people to put information on the Internet and to provide links to other Web sites which provide related information. This makes accessing--or surfing--the net fairly easy and accessible to most people.

The technologies currently available allow for the transmission of text, data, and--to a more limited extent--graphics. Sound and video are more difficult to transmit with the current network. Even graphics can take a long time to be transmitted, and some users of the network turn off the graphics in order to speed the communication process. The current limitations of the network, however, are perhaps most apparent with video. It usually takes several minutes to download a video file, which might actually run for only a few seconds.

As one tries to do more with the network, it becomes increasingly obvious that we need to move to a fully broad band fiberoptic implementation over which high resolution graphics, sound, and full motion video can be more easily transmitted. The establishment of such networks is costly, but those who favor the Internet approach would like to see these broad band networks function in much the same way the Internet does currently.

Today, the Internet is largely being used for academic and personal purposes. The idea, of course, is to extend its use to the commercial realm. Such a move will also introduce cost factors beyond those experienced today, but those who favor the Internet approach would like to see this done in such a way that it is easy and inexpensive to gain access both for the receipt, and transmission, of all forms of information.

In actuality, the technology involved in fiberoptics does have economic advantages. In installing fiber, fewer amplifiers are needed than with copper wire. This means that, although there will be a large initial cost in establishing a broad band network, it will be less expensive to maintain such a network in the long run. In addition, with such technologies it is easier to correct problems

from the central office, rather than having to go into the field. With network management, in fact, problems can be detected centrally often before they are even noticed locally. And if there is a disruption in the network, communications traffic can easily be routed around the problem.

As broad band networks are established, the actual cost of using them becomes quite small. In the future, it is likely that telecommunications companies will derive more of their profit by becoming the billing agents for business conducted across the network--as with 900 numbers today--than from the actual transport of information.

Since the network of the future will be used to distribute intellectual property, not only will the consumer need to be billed for services provided, but the actual owners of the intellectual property being transmitted will need to receive appropriate royalty credit. All of this of course can be tracked by computers attached to the network, and telephone companies have a great deal of experience already in keeping track of literally billions of transactions a day. Along these lines it is interesting to note that AT&T already issues a card which is a combination of a telephone card and credit card.

From this perspective, in order for the network to be commercially effective it would need to be widely available and carry the information of whomever wishes to provide it. In other words, the requirements of such a vision of the network would be **universal access**, and the necessity that these networks function as **common carriers.** Furthermore, communication across the network would need to be **two way**, whether one is talking about data, text, graphics, audio, or video.

With such an approach to the building of the network, small businesses would have access to a global customer base at relatively inexpensive rates, and consumers would have easy access to businesses all over the world. This would end the "one size fits all" mentality of the Industrial Age, allowing for specialization and the meeting of individual preferences. We have already seen such a meeting of customers' specific needs with automated cash register and inventory systems. These have allowed supermarkets to note which products sell at individual localities, and stock their stores differently in different communities. This sort of technology has also led to the development of neighborhood newspapers, and editions of citywide newspapers which cater to the tastes of different ethnic communities.

With coordination provided by computer, small business could flourish while the need for large scale business would generally diminish. In fact, one might argue that the large scale corporation of today is an artifact of the industrial economy; it need not remain the way business is organized in an information economy.

In the political arena, the establishment of electronic communities of interest would allow people to keep informed about matters of interest to them, to discuss these issues with others of like mind, and to communicate their concerns more effectively and in more detail to government officials. In other words, the network could support *electronic committees of correspondence.* What is being suggested here is not simple electronic voting, but rather the enhancement of the intelligent and informed discussion of specific political issues. This certainly would promote democracy as a *deliberative process.*

Among the groups interested in this approach are Computer Professionals for Social Responsibility, the Electronic Frontier Foundation, the Taxpayers Assets Project, the Electronic Privacy Information Center, the Center for Democracy and Technology, the Alliance for Community Media, and many educational groups--including the American Library Association. Many of these groups have banded together and formed the Telecomminications Policy Roundtable.

The Telephone and Cable Companies. On the other side of the debate between decentralization and centralization are the telephone, cable, and computer companies. Their vision of the network is a continuation of the top-down, one-to-many approach of today's television. They seek to establish bottlenecks in the communications process so that they can maintain near monopoly control. This is not what the technology of the Information Age potentiates. However, those who now have power in our society--largely due to the centralizing tendencies of industrial technology--wish to keep and to augment that power. Much of this can be seen in the politics surrounding the telecommunications bills.

The view of these companies involve largely the one way communication of broad band--and especially video--information. Their idea of interactivity is usually that the consumer will have the opportunity to choose what information or television program they wish to receive, or what products they wish to buy, and not that the consumer or citizen will have the opportunity to express what they think to each other, to political officials, and to business leaders.

Because a broad band telecommunications network will be expensive to deploy, many of these companies are interested in only working in areas of concentrated population where cost per household will be the cheapest. They are not interested in servicing everyone--at least not with broad band capabilities. This puts rural areas at a disadvantage, since it is more expensive to service them. For this reason, these companies have been seeking to weaken legal requirements for universal service.

Furthermore, it has been realized for some time that the costs of delivering information will continue to decrease and that, in the future, profit is likely to come from the content of the information being provided, rather than from its transport. Because of this, many of the cable and telephone companies are becoming involved in the production of content--at the present time largely television programming. In order to sell the programming they produce, many of these companies seek to limit access to their networks by other content providers. They oppose the concept of their broad band networks as common carriers.

In other words, if one uses the services of a particular cable or telephone company, one is not likely to be able to easily receive programming from other sources of information or content. Such a scheme would greatly restrict the flow of information, and easily lead to the control of the political content of the information being provided and *received*. TCI, for example, has already been seeking to eliminate from its service a liberally-oriented channel, while at the same time is planning to carry on most of its systems at least three conservatively-oriented channels. This may reflect more of a desire to curry favor with the present Speaker of the House, and the House and Senate majorities than TCI's own political ideology. All of this is exacerbated by the Reagan administration's having rescinded the Fairness Doctrine. This doctrine would have required the airing of at least both sides of an issue.

Many in the computer industry have noted that the way the most money has been made in this industry has largely been through the licensing of technology. Intel receives a royalty for every PC sold which uses its processors, no matter who actually manufactures the computer. Similarly, Microsoft receives a royalty every time an IBM-compatible is sold which uses one of its operating systems--either DOS or Windows--likewise regardless of who manufactures the computer itself.

Various computer companies would like to gain control over the operating systems that will be used by the broad band networks, and the technology which will be used in the set top boxes--which will have to be installed along with every television set on these networks. These set top boxes will convert the digital information which is distributed over the networks into the analogue form

used in home televisions sets. They will also provide methods of navigating through the multiplicity of choices television users will have in the future. Apple has been promoting its QuickTime technology for use in these devices. Microsoft, Novel, Oracle and others are promoting their own operating systems and technologies. As originally written, the telecommunications bills would have required that these systems be **interoperable**. However, the computer companies lobbied against this provision and it was taken out of the bills.

If these systems were interoperable, then one could buy a set top box at any consumer electronic store, such as Radio Shack, and use it no matter which information or television service one employs. It would also mean that one would be able to use the same set top box to receive programming from any other provider.

With non-interoperable systems, you are likely to find that the set top box used to receive programming from one provider will not be able to receive programming from another service--thus locking you into a single service provider. If the service provider you use does not offer a specific channel or source of information in which you are interested, you will be forced to subscribe to a second information service and rent or purchase a second set top box. This, of course, greatly restricts the free flow of information and easy access by small businesses to the consumer.

Capital Investment and Rate Deregulation. The costs of actually establishing broad band networks, as we have noted, are initially quite high. The question therefore arises as to who will pay for this. The regional telephone companies make very sizeable profits. One might think that they could reinvest some of those profits to help finance the establishment of these networks--especially since this would reduce the cost of maintaining their physical plants and substantially increase their value.

The executives of these companies, however, are reluctant to do this. Such a strategy would necessitate reducing the dividends distributed to their shareholders, even though it would greatly increase the value of the company. These executives are fully aware that if they cut the dividends they distribute, their stockholders might sell their stock holdings and cause the market value of their shares to decrease. These companies might consider borrowing the money--certainly something that small businesses do all the time--but the executives of these companies do not view this as a suitable option either.

Where, then, is the money to come from? What the telephone companies want is the deregulation of their rates. These companies would then be free to increase the charges to their customers, and thus have the consumer pay for the installation of broad band networks.

These companies envision a substantial decrease in their operating costs once they have established broad band networks, and so look to a significant decrease in the number of employees they will need to maintain their operations. Like so many other companies today, they are planning to downsize. As a consequence of their implementation plans for broad band technologies, hundreds of thousands of communication workers will lose their jobs. Thus, if these companies have their way, the cost of building these broad networks will be borne mainly by consumers and workers.

The cable companies also need sources of revenue in order to make the improvements they need in their networks. They too are seeking rate deregulation so they can raise their rates and expand their source of funds.

Deregulation has been one of the watch words in Washington lately, but so has federalism. One of the ideas stressed by the Republican majority in Congress today is that more power should be given to the state and local levels of government, and less kept at the federal level. However, in

deregulating rates the current telecommunications bills seek to prevent state utility commissions from regulating the telephone and cable companies operating in their jurisdictions. In other words, this *federal* legislation will limit the ability of *states* to act in the interest of their own citizens.

However, it is more than states that will be affected; it is also local government. In laying fiber and cable for the new broad band networks, city streets and right of ways will have to be used. Yet the House bill--as originally introduced--would have severely limited the ability of local governments to control their own streets and right of ways for such purposes. Interestingly, the full House adopted an amendment to the bill which gives localities far more authority in this area, as well as the ability to collect fees for the use of their right of ways.

Legislative Tactics. One of the interesting aspects of the current debate has been the methods that have been used in the legislative process. In the Senate, substantial concern was expressed because that chamber's telecommunication bill was first discussed by the Republicans on the Senate Commerce Committee along with many of the industry leaders, with the exclusion of the Democratic members of the Committee. And the Democrats in both the House and the Senate have continued to complain that information is not being provided to them in a timely fashion.

Another heavy handed tactic was used during the floor debate on the telecommunication bill in the House. After the provisions of the bill had been hammered out in committee, the leaders of the House introduced on the floor what was called the Managers Amendment, an amendment which affected large portions of the bill. This amendment was introduced at the last minute without sufficient time for the many matters covered by the amendment to be discussed and to allow various interests involved to have their input. As a result of this amendment, many important industry leaders such as AT&T dropped their original support for the bill.

An important consideration in the deregulation of telecommunications has to do with timing and whether or not real computation exists. Almost everybody involved in the process would prefer to see competition, rather than regulation, control the industry. However, it will take time for an industry that has been treated as a regulated monopoly for so long to develop such competition.

In general, the Republicans favor immediate deregulation, while the Democrats generally advocate deregulation only as real competition develops. The House bill, as drafted by the Commerce Committee, included a check list to determine when adequate competition actually existed. When these conditions were met, some regulations that affected the regional telephone companies would be eliminated. However, these provisions were significantly weakened by the Managers Amendment--to the great advantage of the regional telephone companies.

It should be noted in these discussions that although there are basically two competing visions involved in the establishment of broad band telecommunications networks, these two sides are not monolithic. Great differences exist, for example, between the interests of the television networks and local television stations, between the interests of the regional telephone companies and the long distance companies, between the interests of television broadcasters and the cable companies, etc. However, these differences do not detract from the stark contrast between these two major camps--those favoring decentralization, and those promoting the centralization of power. It is this difference in visions which will have the greatest impact on the long term implementation of the telecommunications revolution.

Political Issues. Fundamentally, the issues that need to be focused on in the telecommunications revolution are of an economic nature. This is not to say that the more political issues involved in the current debate are not also important.

One of these issues involves **the right to privacy versus the needs of national security**. Those who are concerned about privacy note that with the development of microcomputer and broad band communications technologies, an increasing amount of our personal information will be transported across the network. There is a need, therefore, for this information to be secured and shielded from external observation and meddling. One of the ways to achieve this is through encryption. In this way private information would not be susceptible to snooping and manipulation by outside parties.

However, those who are concerned about security argue that to allow information to be transported over the network in coded form would create problems for the government in detecting information about criminal or terrorist activities. They want the government to have access to any codes used to encrypt information flowing over the network. Those taking such a stance suggested that access to these codes would be restricted by the need for a properly executed warrant. Those who are concerned about privacy fear that some law enforcement and national security personnel might use their knowledge of these codes to tap into such information--even if such practices are not officially sanctioned. They are also afraid that giving the government access to so much information about the individual would unduly enhance the potential police powers of the state. Last year the controversy centered around the Clipper Chip. This year it has been revived in a somewhat different format as a result of a recent Clinton Administration statement in favor of giving the government access to such codes.

Another political issue involved in telecommunications policy is that of **sexual content and violence**. As the technologies of television, the telephone, and the computer converge, we are faced with the problem that the regulation of these media, as far as sexual content is concerned, varies greatly. In addition, the issue of violence on television and other media has gained a great deal of saliency in recent years. There is great concern especially about children's ability to view material with sexual or violent content, no matter what medium is being used to transmit this material. Some adults may also be offended by sexual or violent materials. In reaction to this situation, a number of bills have been introduced which would limit the sexual or violent content on various media, ranging from television to the Internet.

Some of these attempts at protecting children and others who might be offended by such content runs into strong opposition from those who are concerned about freedom of expression and first amendment rights. Many of the bills which have already been introduced, or which may be introduced in the future could severely limit freedom of expression. In recent sexual content cases, the Supreme Court has held that a determination of whether something is pornographic or not should be determined by the standards of the particular community involved. With the use of a national--and, in fact, global--telecommunications network, this poses a significant problem. As handled by much of the proposed legislation, the community whose standards would be used in determining the pornographic status of content would be that of the *recipient*.

In theory, the idea of using community standards is a good one. Communities within the United States vary markedly in terms of what they would consider pornographic. Leaving the determination of pornography to community standards should theoretically enhance freedom of expression since it would allow different communities to set different standards. What is considered pornographic in a small town in Alabama might likely not be considered pornographic in Los Angeles, New York City, or San Francisco. Unfortunately, if one has to rely on the standards of the community where the recipient of information lives, then one would have to limit sexual or violent

content to the standards of the most conservative of local communities. This is because no matter where the originator of the information resides, with a national or global information network, recipients of that information could reside anywhere. This least common denominator approach to the regulation of sexual or violent content by basing it on the standards of the community in which the recipient resides would have a chilling effect indeed on free expression. Regrettably, in the haste to get on the anti-pornographic and anti-violence bandwagon, some legislators are moving in this direction.

An approach which would allow recipients to limit the content of the information they receive, while at the same time not limiting the content of the information generally carried over the network, is possible today. It would allow people to lock out certain material which they deem unsuitable for themselves or for the children for whom they are responsible. In so doing, it places the responsibility clearly in the hands of the information recipient, and not on the informati originator or the service which provides the telecommunications connection. Such an approach would make far more sense in enhancing the freedom of individuals, both to express themselves freely and to censor content which they find objectionable. This is but one example of how the technology of the telecommunications revolution can provide solutions which would enhance individual rights independent of the centralized governmental or commercial approaches of "one size fits all."

Conclusion

These and other political issues currently in debate are extremely important. However, they should not be used to draw our attention away from the *economic* issues involved in how the national information infrastructure will be deployed, and who will benefit from it. As we have noted, microcomputer and broad band telecommunication technologies present a decentralizing potential very much in line with the concepts of individualism expressed both by our Founders and by Adam Smith.

We have a chance to employ these technologies in a way that will enhance the concept, and further the actualization of individual freedom--the hallmark of modern thinking. Moreover, we have a chance to do so in ways that would be applauded by the thoughtful on both the right and the left. However, there are those who find an advantage in the centralized structures fostered by industrial technology--even though they run counter to the concepts of individual freedom to which they give lip service.

The decentralizing tendencies of the telecommunications revolution are strong indeed, and they may prevail in the end. But the centralizing forces in power today are also very strong, and will not concede easily. It is therefore important that we understand the current situation within its full historic, philosophic, and political context so that our actions, as both scholars and citizens, may truly be in line with our sense of values.